

REMARKS

This is in response to the Office Action dated April 23, 2007. Claims 1-4, 7-10, and 19-23 are pending.

Section 112 Rejections

Claims 5-6 stand rejected under Section 112, second paragraph. This Section 112 rejection is respectfully traversed for at least the following reasons. Contrary to the allegation in the Office Action, all through electrodes are not connected to an electrode pad. As shown in Fig. 1 of the instant specification, and as described on page 19, lines 4-25, for example, a non-contact through electrode 12(1) of the chip 10c is insulated by an insulating film 9 from an electrode pad 2 of the chip 10c. Thus, the non-contact through electrode 12(1) is not connected to the electrode pad 2. Thus, the wording “not electrically connected to an electrode pad” is clear and is supported by examples in the instant specification.

Additionally, with respect to claims 7-8, the Office Action apparently contends that “a through electrode is further provided in regions outside of the electrode pad” is not supported by the specification. This contention is also incorrect. For example, see the instant specification at page 32, lines 2-4. As another example, Fig. 10 shows electrodes 12 in regions outside of the electrode pads 2. The language of claims 7-8 is clear, and is supported by the instant specification.

Claims 1 and 20 – Art Rejection

Claims 1 and 20 stand rejected under Section 102(b) as being allegedly anticipated by Tomita. This rejection is respectfully traversed for at least the following reasons.

Claims 1 and 20 as amended require that “at least one type of the through electrodes is a non-contact through electrode that is not electrically connected to an electrode pad of the

semiconductor chip in which the non-contact through electrode is formed.” For example and without limitation, see Figs. 1, 10 and 12.

In Tomita, if 3, 4, 11, 24, 25 and 26 are electrode pads as alleged in the Office Action, Fig. 1h shows that via hole wirings 27 are electrically connected to 24, 25 and 26. In other words, Fig. 1h of Tomita fails to disclose or suggest that the via-hole wiring 27 is not electrically connected to an electrode pad of the chip in which the via-hole wiring is formed as required by claims 1 and 20. Instead, Tomita teaches directly away from the invention of claims 1 and 20 in this respect.

Thus, claims 1 and 20 clearly define over the cited art for the reasons discussed above. The rejections of claims 1 and 20 should be withdrawn.

Claim 23

Claim 23 requires that “*the through electrodes are provided in respective apertures defined in the electrode pads so as to extend through the pads.*” For example, Fig. 1 of the instant application illustrates that through electrodes 1 are provided in respective apertures defined in pads 2 so that the through electrodes 1 extend through the pads 2. Tomita fails to disclose or suggest this. Tomita’s wirings 25, 11 and 3 are unrelated to the electrode pads of claim 23, and the above clarifying language makes this clear. Tomita’s alleged through electrodes 27, 22, 9 do not extend through any apertures in 3, 11, 25. Moreover, one of ordinary skill in the art would never have modified Tomita to provide apertures in power wirings 3, 11 and 25.

Conclusion

KIMURA et al
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It is respectfully requested that all rejections be withdrawn. All claims are in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

Respectfully submitted,

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